## In the Claims

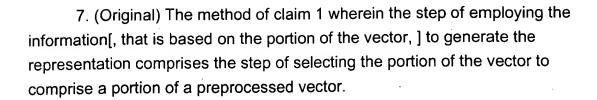
1. (Amended) A method for generating a syndrome usable in a decoder, the method comprising the steps of:

employing information[, that is based on a portion of a vector,] to generate a representation, wherein the step of employing the information to generate the representation comprises the steps of generating a reduction mask from a root of a generator polynomial and employing the reduction mask to generate the representation; and

generating, with employment of the representation, the syndrome.

- 2. (Amended) The method of claim 1 wherein the step of employing the information[, that is based on the portion of the vector,] to generate the representation comprises the step of employing a number of minimal polynomials to operate on the portion of the vector.
- 3. (Original) The method of claim 2 wherein the step of employing the number of minimal polynomials to operate on the portion of the vector comprises the step of selecting the number of minimal polynomials to comprise a generator polynomial employed to encode the portion of the vector.
- 4. (Amended) The method of claim 1 wherein the step of employing the information[, that is based on the portion of the vector, ] to generate the representation and the step of generating, with employment of the representation, the syndrome comprise the step of generating a syndrome for a binary Bose-Chaudhuri-Hocquenghem code.
- 5. (Amended) The method of claim 1 wherein the step of employing the information[, that is based on the portion of the vector,] to generate the representation and the step of generating, with employment of the representation, the syndrome comprise the step of generating a syndrome for a binary cyclic code.
- 6. (Original) The method of claim 1 wherein the step of generating, with employment of the representation, the syndrome comprises the step of converting and/or transforming the representation to obtain the syndrome.





## 8. Canceled.

- 9. (Amended) The method of claim [8] 1 wherein the step of employing the reduction mask to generate the representation comprises the step of selecting the reduction mask to represent a minimal polynomial that is based on a cyclotomic coset and on the root of the generator polynomial.
- 10. (Amended) The method of claim [8] 1 wherein the representation comprises an odd-numbered representation, wherein the syndrome comprises an even-numbered syndrome, in combination with a method for generating the even-numbered syndrome, comprising the steps of:

employing the reduction mask to generate the odd-numbered representation; and

generating, with employment of the odd-numbered representation, the even-numbered syndrome.

11. (Original) The method of claim 10 wherein the root of the generator polynomial comprises an even-powered root of the generator polynomial, and wherein the step of generating, with employment of the odd-numbered representation, the even-numbered syndrome comprises the steps of:

determining a conversion mask from an even-powered root of the generator polynomial; and

converting, with employment of the conversion mask, the oddnumbered representation to obtain the even-numbered syndrome. 12. (Amended) The method of claim [8] 1 wherein the representation comprises an odd-numbered representation, wherein the syndrome comprises an odd-numbered syndrome, in combination with a method for generating the odd-numbered syndrome, comprising the steps of:

employing the reduction mask to generate the odd-numbered representation; and

generating, with employment of the odd-numbered representation, the odd-numbered syndrome.

13. (Original) The method of claim 1 wherein the step of generating, with employment of the representation, the syndrome comprises the steps of:

determining a conversion mask from a root of a generator polynomial; and

converting, with employment of the conversion mask, the representation to obtain the syndrome.

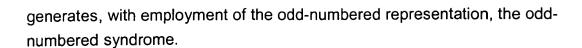
14. (Amended) A system for generating a syndrome usable in a decoder, the system comprising:

a reducer that employs information[, that is based on a portion of a vector,] to generate a representation and wherein the reducer employs a reduction mask to generate the representation, wherein the reduction mask is generated from a root of a generator polynomial; and

a converter that generates, with employment of the representation, the syndrome.

- 15. (Original) The system of claim 14 wherein the reducer employs a number of minimal polynomials to operate on the portion of the vector.
- 16. (Original) The system of claim 15 wherein the reducer selects the number of minimal polynomials to comprise a generator polynomial employed to encode the portion of the vector.
- 17. (Original) The system of claim 14 wherein the reducer and the converter generate a syndrome for a binary Bose-Chaudhuri-Hocquenghem code.

- 18. (Original) The system of claim 14 wherein the reducer and the converter generate a syndrome for a binary cyclic code.
- 19. (Original) The system of claim 14 wherein the converter converts and/or transforms the representation to obtain the syndrome.
  - 20. Canceled.
  - 21. Canceled.
- 22. (Amended) The system of claim [21] 14 wherein the reduction mask represents a minimal polynomial that is based on a cyclotomic coset and on the root of the generator polynomial.
- 23. (Amended) The system of claim [21] 14 wherein the representation comprises an odd-numbered representation, wherein the syndrome comprises an even-numbered syndrome, in combination with a system for generating the even-numbered syndrome, wherein the reducer employs the reduction mask to generate the odd-numbered representation, and wherein the converter generates, with employment of the odd-numbered representation, the even-numbered syndrome.
- 24. (Amended) The system of claim 23 wherein the root of the generator polynomial comprises an even-powered root of the generator polynomial, and wherein the converter converts, with employment of a conversion mask, the odd-numbered representation to obtain the even-numbered syndrome, wherein the conversion mask is determined from an even-powered root of the generator polynomial.
- 25. (Amended) The system of claim [21] <u>14</u> wherein the representation comprises an odd-numbered representation, wherein the syndrome comprises an odd-numbered syndrome, in combination with a system for generating the odd-numbered syndrome, wherein the reducer employs the reduction mask to generate the odd-numbered representation, and wherein the converter



26. (Original) The system of claim 14 wherein the converter converts, with employment of a conversion mask, the representation to obtain the syndrome, wherein the conversion mask is determined from a root of a generator polynomial.

## 27. (Amended) An article of manufacture, comprising:

at least one computer usable medium having computer readable program code means embodied therein for causing generation of a syndrome usable in a decoder, the computer readable program code means in the article of manufacture comprising:

computer readable program code means for causing a computer to employ information[, that is based on a portion of a vector,] to generate a representation, wherein the computer readable program code means for causing a computer to employ the information to generate the representation comprises computer readable program code means for causing a computer to generate a reduction mask from a root of a generator polynomial and computer readable program code means for causing a computer to employ the reduction mask to generate the representation; and

computer readable program code means for causing a computer to generate, with employment of the representation, the syndrome.

- 28. Canceled.
- 29. Canceled.
- 30. (Amended) The article of manufacture of claim 27 wherein the computer readable program code means for causing a computer to employ the information[, that is based on the portion of the vector, ] to generate the representation and the computer readable program code means for causing a computer to generate, with employment of the representation, the syndrome comprise computer readable program code means for causing a computer to generate a syndrome for a binary Bose-Chaudhuri-Hocquenghem code.



- 31. (Amended) The article of manufacture of claim 27 wherein the computer readable program code means for causing a computer to employ the information[, that is based on the portion of the vector,] to generate the representation and the computer readable program code means for causing a computer to generate, with employment of the representation, the syndrome comprise computer readable program code means for causing a computer to generate a syndrome for a binary cyclic code.
- 32. (Original) The article of manufacture of claim 27 wherein the computer readable program code means for causing a computer to generate, with employment of the representation, the syndrome comprises computer readable program code means for causing a computer to convert and/or transform the representation to obtain the syndrome.

## 33. Cancelled.

34. (Amended) The article of manufacture of claim 27 wherein the computer readable program code means for causing a computer to employ the information[, that is based on the portion of the vector, ] to generate the representation comprises:

computer readable program code means for causing a computer to generate a reduction mask from a root of a generator polynomial; and computer readable program code means for causing a computer to employ the reduction mask to generate the representation.

- 35. (Original) The article of manufacture of claim 34 wherein the computer readable program code means for causing a computer to employ the reduction mask to generate the representation comprises computer readable program code means for causing a computer to select the reduction mask to represent a minimal polynomial that is based on a cyclotomic coset and on the root of the generator polynomial.
- 36. (Original) The article of manufacture of claim 34 wherein the representation comprises an odd-numbered representation, wherein the syndrome comprises an even-numbered syndrome, wherein the at least one computer usable medium includes second computer readable program code



means embodied therein for causing generation of the even-numbered syndrome, the second computer readable program code means in the article of manufacture comprising:

computer readable program code means for causing a computer to employ the reduction mask to generate the odd-numbered representation; and computer readable program code means for causing a computer to generate, with employment of the odd-numbered representation, the even-numbered syndrome.

37. (Original) The article of manufacture of claim 36 wherein the root of the generator polynomial comprises an even-powered root of the generator polynomial, and wherein the computer readable program code means for causing a computer to generate, with employment of the odd-numbered representation, the even-numbered syndrome comprises:

computer readable program code means for causing a computer to determine a conversion mask from an even-powered root of the generator polynomial; and

computer readable program code means for causing a computer to convert, with employment of the conversion mask, the odd-numbered representation to obtain the even-numbered syndrome.

38. (Original) The article of manufacture of claim 34 wherein the representation comprises an odd-numbered representation, wherein the syndrome comprises an odd-numbered syndrome, wherein the at least one computer usable medium includes second computer readable program code means embodied therein for causing generation of the odd-numbered syndrome, the second computer readable program code means in the article of manufacture comprising:

computer readable program code means for causing a computer to employ the reduction mask to generate the odd-numbered representation; and computer readable program code means for causing a computer to generate, with employment of the odd-numbered representation, the odd-numbered syndrome.





39. (Original) The article of manufacture of claim 27 wherein the computer readable program code means for causing a computer to generate, with employment of the representation, the syndrome comprises:

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computer readable program code means for causing a computer to determine a conversion mask from a root of a generator polynomial; and computer readable program code means for causing a computer to convert, with employment of the conversion mask, the representation to obtain the syndrome.